



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/529,919

04/01/2005

Selim Yalvac

60285A

5284

109 7590 12/19/2008

The Dow Chemical Company
Intellectual Property Section
P.O. Box 1967
Midland, MI 48641-1967

EXAMINER

LENIHAN, JEFFREY S

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

12/19/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/529,919	Applicant(s) YALVAC ET AL.	
	Examiner Jeffrey Lenihan	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 November 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6, 10-15, 17-19, 22, and 23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 10-15, 17-19, 22, and 23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04/01/2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>11/12/2008</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/13/2008 has been entered.
2. The objections and rejections not addressed below are deemed withdrawn.
3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office Action.

Response to Arguments

4. Applicant's arguments with respect to claims 1-6, 10-15, 17-19, 22, and 23 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

5. Claims 1-6, 10-15, 17-19, 22, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sehanobish et al, US5861463, in view of Lai et al, US5278272.
6. The instant claims are directed towards a thermoplastic blend composition comprising

Art Unit: 1796

A) from 75 to 99 weight percent, based on the total weight of the thermoplastic blend composition, of a thermoplastic polyolefin composition, which comprises the following:

- (a) from 50 to 100 weight percent of polypropylene, HDPE, or a mixture thereof; and
- (b) from 0 to 50 weight percent of a first ethylene/ α -olefin interpolymers having a density less than, or equal to, 0.9130 g/cm³; and

B) from 1 to 25 weight percent, based on the total weight of the thermoplastic blend composition, of an extender comprising a second ethylene/ α -olefin interpolymers, other than component A)(b), and having the following properties:

- (a) a density of at least 0.855 and less than, or equal to, 0.8990 g/cm³; and (b) a Brookfield Viscosity, at 350°F, from 500 cP to 50,000 cP ~~70,000 cP~~; and

wherein the melt index of said thermoplastic blend composition is increased by at least 5 percent, relative to that of said thermoplastic polyolefin composition.

7. Sehanobish discloses a thermoplastic polymer composition comprising 1) a polymer matrix such as polypropylene or HDPE (Column 2, lines 32-39), corresponding to component A(a) above; 2) at least 25% by weight of an elastomeric impact modifier such as an ethylene/ α -olefin interpolymers having a density in the range of 0.855-0.870 g/cm³ (Column 4, lines 10-14), corresponding to component A(b) above; and 3) at least 10% by weight of a homogeneous linear or substantially linear ethylene polymer (SLEP) (Column 1, lines 45-64), corresponding to component (B) above (claims 1-4, 10, 17, 18). The density of component (3) is recited to be at least 0.4 g/cm³ higher than the density of component (2), corresponding to a range of 0.859-0.870 (claim 5). Based on the recited amounts of components (2) and (3), the thermoplastic polymer composition would comprise up to 65% by weight of the polymer matrix; the examiner notes that the

Art Unit: 1796

combination of components (1) and (2) of the thermoplastic polymer composition of Sehanobish corresponds to Part (A) of the composition of the instant claims (claims 1-3, 11-13, 17). Sehanobish teaches that the composition of US5861463 may further comprise a filler (Column 7, lines 60-63) (claims 22, 23) and can be used in the manufacturing of articles or parts via processes such as injection molding (Column 8, lines 63-67) (claims 6, 15, 19).

8. Sehanobish does not recite the Brookfield viscosity or melt index of the linear ethylene polymer or SLEP used as the third component.

9. Lai discloses elastic SLEPs characterized by a density of 0.85-0.97 g/cm³, a melt index at 190 °C, I₂, of 0.01-1000 g/10 min, and a polydispersity index less than about 5 (Column 3, lines 4-14) (claims 1-5, 17). Lai discloses that said elastic SLEP may be blended with olefin polymers, such as HDPE, to prepare thermoplastic compositions (Column 15, lines 47-62) which are characterized by properties which lead to enhanced processability (Column 2, lines 32-45).

10. Lai does not disclose the Brookfield viscosity at 350 °F of the elastic SLEP; however, the examiner takes the position that the SLEP of Lai would inherently have a Brookfield viscosity overlapping the recited ranges (claims 1-3, 14, 17). The examiner notes that Dubois et al, US6107430, teaches that it is known in the art that SLEPs characterized by a density of less than 0.895 g/cm³ (Column 5, lines 22-28), a polydispersity index of 1.5-2.5 (Column 11, lines 43-47), and a melt index at 190 °C of 200-2000 g/10 min (Column 12, lines 62-65), also have a Brookfield viscosity at 350 °F of 2,000-18,000 cP (Column 12, line 66 to Column 13, line 10); the examiner notes that

Art Unit: 1796

these density, polydispersity index, and melt index values all overlap with the values recited by Lai as stated above. Melt viscosity is known to be inversely related to the melt index of a polymer. As the recited range for the melt index at 190 °C of the elastic SLEP of Lai overlaps with the melt index range of the SLEP described in Dubois, the examiner takes the position that the elastic SLEP of Lai is inherently characterized by a range for the Brookfield viscosity which overlaps the range of 2,000-18,000 cP recited in Dubois (claims 1-3, 14, 17).

11. Sehanobish teaches that the requirements for the homogeneous linear or SLEP polymer used as the third component in the composition of US5861463 are that the polymer has a polydispersity index of less than 3.5 and a density that is at least 0.04 g/cm³ greater than the elastomeric impact modifier component (Column 7, lines 27-57). Sehanobish does not disclose a required value for either the melt index or (Brookfield) viscosity of this component of the composition. As noted above, the elastic SLEP of Lai is characterized by a polydispersity index and a density which overlap the polydispersity index and density of the SLEP of Sehanobish. The examiner therefore takes the position that it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the polymer composition of Sehanobish by using an elastic SLEP having a melt index of 0.01-1000 g/10 min and, by extension, a Brookfield viscosity overlapping the claimed values as the third component of the thermoplastic polymer composition for the purpose of improving the processability of said thermoplastic polymer composition, as taught by Lai.

Art Unit: 1796

12. Sehanobish does not disclose that the melt index of the thermoplastic blend composition is increased by at least 5% (claim 1), 10% (claim 2), or 15% (claim 3) relative to the polyolefin composition as recited in the instant claims. As noted above, however, the combination of Sehanobish and Lai renders obvious a composition prepared by blending a polyolefin composition (A) and a SLEP having the recited Brookfield viscosity (B) in the ratios claimed. As this composition comprises the same components combined in the same ratios, the examiner takes the position the thermoplastic polymer composition of Sehanobish and Lai would inherently possess the recited properties (claims 1-3).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey Lenihan whose telephone number is (571)270-5452. The examiner can normally be reached on Monday through Thursday from 7:30-5:00 PM, and on alternate Fridays from 7:30-4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James J. Seidleck can be reached on 571-272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1796

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ Irina S. Zemel/
Primary Examiner, Art Unit 1796

Jeffrey Lenihan
Examiner
Art Unit 1796

/JL/